

## REMARKS

### I. Summary of the Office Action and this Reply

Claims 1-18 and 39-55 are pending; claims 19-28 have been canceled. The Examiner has rejected claims 1, 5-8, 10-12, 15-18, 29-30, 32, 36, 45, 47-48, 51 and 54-55 under 35 U.S.C. §102(e), asserting that such claims are anticipated by U.S. Patent No. 6,673,620 to Loeffler et al. ("Loeffler"). The Examiner has rejected claims 1-8, 10, 16-18, 29-36, 45, 47, 49, 52 and 54-55 under 35 U.S.C. §102(b), asserting that such claims are anticipated by U.S. Patent No. 5,192,503 to McGrath et al. ("McGrath"). Further, the Examiner has rejected claims 1-7, 17-18, 29-31, 45, 47, 49 and 52 under 35 U.S.C. §102(b), asserting that such claims are anticipated by U.S. Patent No. 4,738,824 to Takeuchi ("Takeuchi"). Further still, the Examiner has rejected claims 11-15 and 37-45, 49 and 52 under 35 U.S.C. §103(a), asserting that such claims are obvious over McGrath. The Examiner has rejected claim 1 under 35 U.S.C. §112.

The Examiner is thanked for the recognition of allowable subject matter in claims 9, 33, 34, 46, 50 and 53. In this Reply, claims 9, 33 and 46 are rewritten in independent form including all of the limitations of the base claim and any intervening claims; claim 34 depends from claim 33, and claims 50 and 53 depend from claim 46. Claims 49 and 52 have been amended to depend from claim 46. Therefore, claims 9, 33, 34, 46, 49, 50, 52 and 53 are allowable.

Further, claims 4, 6, 7, 12, 17 and 45 are canceled. Claims 1, 3, 5, 13, 18, 29-31, 36, 37, 47, 48, 51, 54 and 55 have also been amended. No new matter has been

added; support for the claim amendments can be found, *inter alia*, on page 16, lines 1-29, page 29, lines 1-11, and Figures 9 and 10, of the original specification.

## **II. Examiner Interview Summary**

The Examiner is thanked for the telephone interview conducted on January 10, 2008. Pending rejections and proposed amendments to claims 1, 3, 5 and 29 were discussed. No agreement was reached with respect to the claims.

## **III. Response to 102 Rejections**

A rejection under 35 U.S.C. §102 is proper only if each and every element of the claim is found in a single prior art reference. MPEP § 2131. The Examiner has rejected claims 1-8, 10-12, 15-18, 45, 47-49, 51, 52, 54 and 55 under 35 U.S.C. §102, asserting that each and every element of these claims are found in Loeffler, McGrath and/or Takeuchi.

### **Claims 29-32, 35 and 36**

Method claims 29-32, 35 and 36 are directed to a method for performing a step of a hybridization reaction on the surface of a substrate. With respect to claim 29, the Examiner states on page 5 of the Action that "there is no indication as to what defines a 'controlled manner'." In response thereto, claim 29 is amended herein to recite the method step of removing of fluid reagent from contact with a substrate in "a manner causing surface tension of said fluid in conjunction with a level of hydrophobicity or

hydrophilicity of said surface of said substrate to limit formation of isolated droplets of said fluid separate from a major mass of said fluid in said housing chamber." There is no teaching or suggestion in the cited art of a method step of removing fluid from contact with a substrate in the claimed manner. As described in the application, removal of fluid from contact with the substrate in such a manner substantially eliminates fluid droplet formation on the substrate, and thus provides a substantially dry substrate surface, without a separate conventional drying step. See page 16, lines 1-19. For at least this reason, reconsideration and withdrawal of the rejection of claims 29-32, 35 and 36 are requested respectfully.

**Claims 1, 2, 3, 5, 8, 10, 11, 15, 16, 18, 47, 48, 51, 54 and 55**

Independent claim 1 is directed to a device for conducting processing steps on a substrate comprising an array of chemical compounds on a surface thereof.

In response to the Examiner's comments on pages 2-4 of the Action, claim 1 is amended herein to positively recite a substrate, and fluid as elements of the claim. Further, claim 1 is amended herein to recite specific structure distinguishing over the cited art, namely, "a computer controlling said device to cause said fluid separation mechanism to separate fluid in said housing chamber from contact with said substrate in a controlled manner that preserves the integrity of said fluid's meniscus . . . by causing surface tension of said fluid in conjunction with a level of hydrophobicity or hydrophilicity of said surface of said substrate to limit formation of isolated droplets of said fluid separate from a major mass of said fluid in said housing chamber." See page

29, lines 1-11; Figures 9 and 10. Thus, recitations have been added to clarify the meaning of preservation of the fluid's meniscus. This is neither taught nor suggested by the cited art.

Claims 2, 3, 5, 8, 10, 11, 15, 16 and 18 depend from claim 1 and are likewise patentable for the reasons set forth above for claim 1.

Claims 48, 51, 54 and 55 depend from claim 1. Further, claims 48 and 51 depend from claim 1 and recite a wedge positioned to insert between and separate (or part) a sandwich of said substrate and a cover slide positioned in said housing chamber to expose said surface of said substrate to fluid within said housing chamber. Claim 54 recites that the computer controls said fluid separation mechanism to provide for a constant velocity of flow of fluid during its removal from the housing chamber. Claim 55 recites that the computer controls said fluid separation mechanism to provide for a constant velocity of movement of the fluid's meniscus. See page 20, line 30 – page 21, line 7. This is neither taught nor suggested by the cited art.

Independent claim 47, as amended herein, includes certain recitations similar to claim 1, but recites "a fluid separation means for separating fluid from contact with said substrate in a controlled manner that preserves the integrity of the fluid's meniscus by causing surface tension of the fluid in conjunction with a level of hydrophobicity or hydrophilicity of the surface of the substrate to limit formation of isolated droplets of said fluid separate from a major mass of said fluid in said housing chamber." Thus, claim 47 properly invokes 35 USC 112, 6<sup>th</sup> paragraph, and the stated function must be given patentable weight. Further, amended claim 47 recites additional structure distinguishing

over the cited art, namely, a computer controlling said fluid separation means to separate fluid in said housing chamber from contact with said substrate in said controlled manner. This is neither taught nor suggested by the cited art.

For at least these reasons, reconsideration and withdrawal of the rejections of claims 1, 2, 3, 5, 8, 10, 11, 15, 16, 18, 47, 48, 51, 54 and 55 are requested respectfully.

### **III. Response to 103 Rejections**

Claims 11-15 and 37-44, 49 and 52 stand rejected under section 103 over McGrath.

Claims 11-15 depend from claims believed allowable, and are thus believed patentable for at least the reasons set forth above.

Claim 37 is directed to an apparatus for conducting a processing step of a hybridization reaction involving an array of biopolymers on the surface of a substrate. The apparatus comprises one or more devices according to claim 3. Accordingly, claim 37 is believed patentable for reasons similar to those set forth above for claims 1 and 3. Claims 38-44 depend from claim 37 and are likewise patentable.

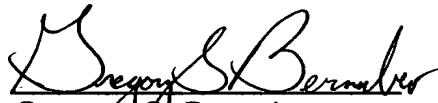
Claims 49 and 52 have been amended to depend from allowable claim 46 and are thus allowable.

**CONCLUSION**

In view of the foregoing amendments and remarks, Applicants believe claims 1-3, 5, 8-18, 29-44 and 46-55 to be patentable and the application in condition for allowance, and requests respectfully issuance of a Notice of Allowance. If any issues remain, the undersigned requests a telephone interview prior to the issuance of an action.

Respectfully submitted,

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